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Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

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In This Issue: *Piece-Meal, No! In for Life—Irrigation for Wet or Dry Country—25c. per KW-HR; Coming in, Not Going Out—Attic Fan Cools Farm Home—Electrical Housekeeping and Other Regular Features. Cover Title Contest—See Inside Back Cover*

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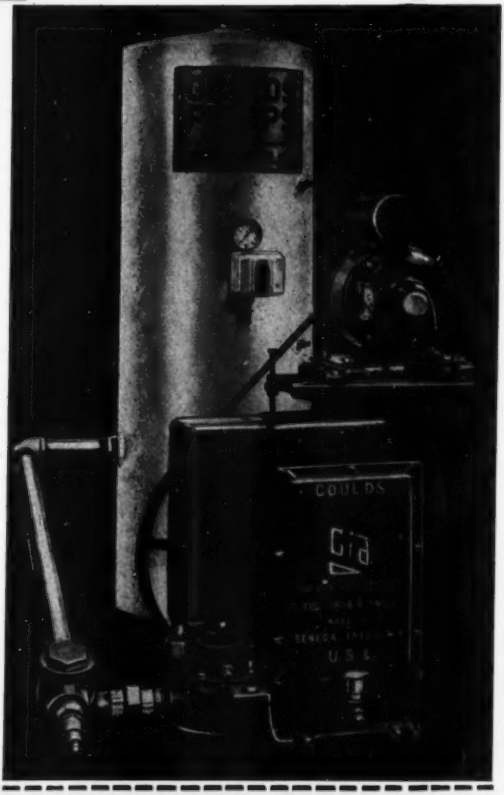

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Editor's Chat

I LIKE A SHOWER

You're sweaty. The chores are done, but you are tired and dirty from a day in the field. A swim would feel good. The creek's too far away. I like a shower!

It has been a hot day in the kitchen. The noon dishes are washed and the baking done. There's a few minutes to rest. A warm bath would help; but there's the tub to fill, and then empty and clean. I like a shower.

A cold dip is invigorating after a warm bath. Keeps you young. Mary isn't handy to douse you with a bucket. I like a shower.

Someone has used all the warm water. Oh, boy! It's too chilly to get in that tub of cold water. You might jump in and right out, but you'd have to mop the floor. I like a shower.

The hired man took his bath. There's a ring around the tub. I like a shower.

There's all kinds of baths: Creek, tub, Turkish, hose, splash and sun. But for just everyday bathin' and feelin' good; for the little inexpensive corner installation down at the barn or milk house; for a nook on the back porch, or where there isn't room for a tub; or as a water saving, back tickling adjunct to the bath tub;—I like a shower.

MIXER ON THE SPOT

A kitchen mixer has a bottom. That bottom has to be in the right spot to get results. You know about bottoms. They have to be placed right. Edges need to be rounded off in some places to read the catalogs in comfort, and there should be cushions at the Fourth of July oration. Now a kitchen mixer may not have any nether pains, but its bottom must be comfortably located if it is to perform its duty as it should.

A kitchen mixer should lead a sedentary life. It should have a convenient place to sit and then be allowed to sit there. If you have to get it off the bottom shelf, move the pans to put it down, rig up its works, and plug it in every time you want to beat an egg or squeeze an orange;—well it just isn't natural, and the chances are that you will eat oranges "on the half shell." But give the mixer a nice, comfortable spot—comfortable for you—where it will not be "in the way" but will be right in the way when you want to mix a cake, or slice a carrot, and it is one of the most talk provoking contraptions that women have in their kitchens.

$35,000 A GREAT WORRY

One night last winter I was coming down on the train from Hartford to New York. The man in the seat with me looked affable, so we struck up a conversation. He was a manufacturer of eyeglasses. After we settled all of the political questions, the conversation turned to the happiness and security of people in different occupations. I told of some acquaintances who had found real happiness, and satisfaction on the farm. Then he told me of a friend of his. The man was an attorney—a good one, a little beyond middle age, well educated and with social standing. He was employed by a large corporation at a salary of $35,000 per year. He had a family and lived in one of the better surburban districts of New York. His living standards were in keeping with his salary. What more could a man ask for? But Mr. Attorney was worried. He knew that sometimes when people get salaries of $35,000 and a "recession" comes along, the Corporation gives him a testimonial banquet, his associates tell him what a fine fellow he is, and then he is laid off. Some younger chap who will work for less, gets his job. If that happened, what would he do? The most he could hope for at his age in a new job was $5,000. That would not keep up his home. He could not maintain his social standing. Like most salaried men, he had spent as he earned—had to do it to retain his position. His children would be chagrined if their standards had to be lowered. He could not live on the grass that grew on his beautiful lawn. He had no hens or cows. What would he do?

Now $5,000 looks like plenty of money to me, and it may to you. But it is not the $5,000 that worries. It is the reduction from $35,000. The worry would be just as real if the reduction was from $3,500 to $500, or from $350 to $50. Not all men with money are happy. "All is not gold that glitters."

GEO. W. KABLE

—I'm proud I am a farmer—

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Piecemeal?

No—In For Life

Powered Miracles from Three Little Wires Give Lawson Powers and "Miss Minnie" a New Start

By NAOMI SHANK

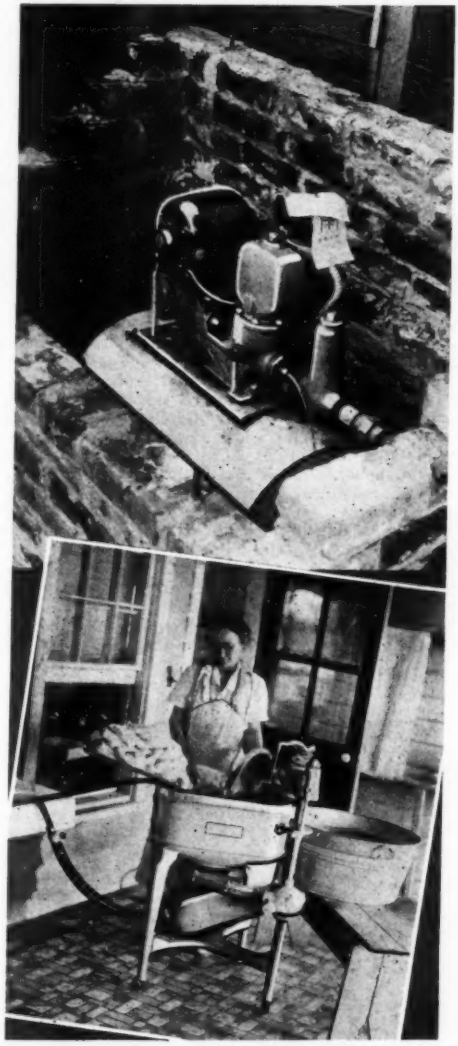
Miss Shank is Home Service Director of Virginia Electric and Power Company, Norfolk, Va.

THE Lawson Powers are just one of the millions of American families who have been living down quiet, sparsely settled country lanes where the same fields, thoughts of modes of living have been turned over by their immediate kin folks for generations back. But the Lawson Powers of tomorrow will not be the same as the Lawson Powers of yesterday, since electricity has come down the road to them. From here on the future generations, turning the same fields, will have different thoughts and different modes of living, all because of the powered miracles on tap in 3 little wires!

How they got electricity is a long story which began 8 years ago when Mrs. Powers, whom all acquaintances know, and you as readers should know as "Miss Minnie," became interested in a Home Demonstration Club, which in turn was interested in getting electric service for their homes. In time the requirements were met and down to the back country high line road went the survyors and linemen; and electric service became a reality for the Powers. "We are not as young as we used to be," they said, so instead of taking on the advantages of electricity in piece meal fashion, they decided to invest some of their savings in an all electric farm. By doing so they could then go into the years ahead enjoying the results of their labors instead of just living and hoping.

"Better Light for Better Sight"

In the more recent meetings of the Home Demonstration Club there had been a great deal of discussion about "Better Light for Better Sight." One of their best friends had his farm all rewired and new fixtures installed. It was decided to visit this farm and discuss their own proposed undertaking. Upon recommendation of their friends they secured the assistance of the Power Company Agricultural Engineer and the Home Service Supervisor. The men folks worked on the outside with the buildings, while on the inside the house the women folks carried crayons and sketched floor plans. They wandered through the entire house noting the natural positions for switches, the locations for possible appliances and lamps which would be moved as the seasons change and the furniture gets shifted about, and as the stoves come in and go out and the Christmas trees go up. The



Upper: Water system being bricked-in for protection.

Lower: "Miss Minnie" ends her wash day in half a morning on the electrically equipped back porch.

Light and entertainment. Home didn't use to be like this.

preparation work was done before the wiring contractor arrived so that he could work on definite plans. All this led to adequate wiring.

Center ceiling fixtures and portable lamps were selected from a utilitarian standpoint. Step-saving placement of cooking, preparation and storage equipment had to be planned so as to serve the most efficiently during the six months of the year that the meals are served on the back porch, the four months in the kitchen and the two months in the dining room. Ideas were shifted about like checkers on a board until all were in king row!

Having had enough of sponge baths and Saturday dunks in the wash tub, they decided a bathroom was essential. Yet, where could space be found? Finally the 4x5 foot unfinished storage room with a window was given a 3 foot adjoining corner from one of the bedrooms. Mr. Powers, with the boys, built what they say is "The most luxurious room in the house." It is the bathroom with tiled-in shower and inlaid linoleum on the floor! There's enough water from a time-controlled hot water heater to scald the chickens for market at six in the morning, wash the clothes and dishes, do the cleaning and hand washing, and still have enough for baths and showers that four farm men and two women enjoy in a day's time.

The screen enclosed porches, much used during the summer months, came in for their share of lighting fixtures and appliance receptacles for lamps, fans, radios, sewing and washing machines, small motors, razors, Christmas decorations and illumination for a pet lily pond.

The living room, dining room, kitchen and catch-all room (where eggs are cleaned and sorted, muddy clothes and boots are changed, darning and sewing are cared for) have overhead fixtures of the semi-indirect type to avoid shadows and give good general light in the room. The working centers are served from wall appliance receptacles with portable or pin-it-up lamps. As the seasons change these working centers change and this arrangement for light has appealed so much to the men folks!

Three of the bedrooms have inexpensive semi-indirect overhead fixtures with an appliance receptacle on the wall switch panel. The fourth bedroom, the guest room, has the same equipment plus two additional double base board receptacles to furnish a bedside reading lamp and convenient lighting for the dressing table. Since the chicken business is "Miss Minnie's" she has had installed on the wall beside her bed, a switch to turn the lights on in the laying houses.

This switch, incidentally, is one of the few regrets the Powers have on their wiring system. It developed that this switch for the chicken house is a little too high and "Miss Minnie" has to raise herself to an elbow rest position to work it! You just cannot treat the house-wiring job too lightly! Imagine the mistakes the Powers could have made without giving their investment some investigation and thought.

Now to the kitchen which really had a lot of attention and a reasonable amount of money spent on it. There is an electric range with an insulated oven, heat control, and enclosed units. The boarder was against a new range. He just knew it wouldn't bake biscuits as good as the old wood stove. But even running the chance of losing a cash boarder, the wood box went out, the bulky wood stove gave its space to an ample sized electric refrigerator (the predecessor ice box had been way out on the back porch). The kitchen cabinet made way for the electric range. An electric mixer moved in on top the oven to make butter and whip potatoes and cakes into fluffiness. Each kitchen wall has a double receptacle for the convenient attachment of portable appliances. And ironing—"Miss Minnie" smiles as she sits on her utility stool in the kitchen with a fan to her back and guides a heat controlled hand iron over the snowy white linens. Extravagant gentlemen farmers you say? No, just business minded plain every day dirt farmers who are taking out health dividends in the electric way of living.

The kitchen has a lighting fixture with a 200 watt bulb in the center of a white painted ceiling. The white paint reflects light better and the electric range won't smoke it up. There's also a wall light near the sink and stove which has an appliance receptacle at its base. "Miss Minnie" attaches her table appliances to this when she uses them on the dining table on the back porch.

Where the old refrigerator stood on the porch there is now a sink with hot and cold water, where the men can wash up when they come in from the

(*Move on page* 20)

The cash boarder found he liked electrically baked biscuits too.

IRRIGATION OUTFITS

Tomatoes being irrigated with a portable rainmaker in Sacramento County, Cal.

to Fit the Wet Country

Light Weight Portable Pipe and Rotating Sprinklers Backed by Electric Pumps Are Doing a Real Job

By F. W. DUFFEE

Mr. Duffee is head of the Agricultural Engineering Department, University of Wisconsin, Madison, Wis. He has a wide reputation for research and development work in the Agricultural Engineering field.

NOW we'll have to revise our ideas of irrigation again. Not so many years ago, irrigation was a practice carried on in some parts of the Far West, to make farm land out of virtual desert. It wasn't for the Middle West, the East, or the South—weren't these "humid" areas, getting from 25 to 50 inches of rainfall per year?

Then, a decade or so ago, growers of small fruit and truck crops in these humid areas began to show dissatisfaction with Nature's distribution of rainfall, which all too often allowed their crops to be damaged or ruined by drought. Irrigation systems began to appear—first the stationary overhead pipe sort, then the porous hose, and more recently the portable rotary sprinkler type.

Right now developments are appearing which promise to do for irrigation what Ford did for the automobile—that is, make it cheap to install, economical to operate, and very popular. It is coming within reach of the "little" farmer no less than the aggressive large operator.

One factor here is the junior portable rotary sprinkler system, which is appearing on the market for the first time this season. Selling for about $200 to $400 complete, and operating on two or three horsepower, it is ideal for the farmer who wants to irrigate 10 acres or less.

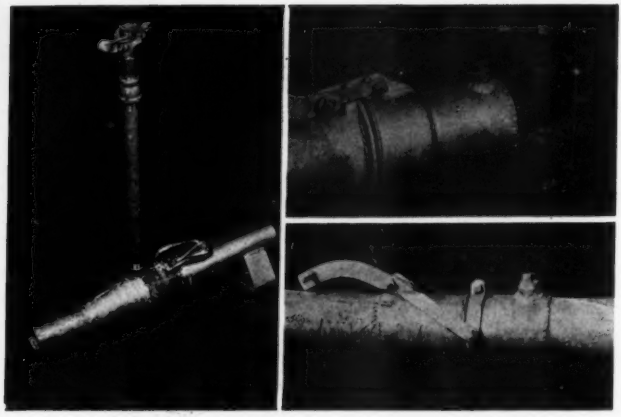
In common with larger systems of the portable rotary sprinkler type, the new small units have certain definite advantages. They cause little or no erosion or puddling of the soil. If the land is rolling, that is no serious drawback, for the pipe couplings allow considerable flexibility. Sprinkler lines can be moved quickly and easily, for they are taken apart in a few minutes without tools and are light in weight.

The essentials in this system are (1) a source of water, such as a lake, stream, pond, or well; (2) a pump; (3) a motor to operate the pump; (4) a main line to transport water from the pump to the field; and (5) a sprinkler line on which are mounted rotary sprinklers at 20-foot intervals.

The new junior system operates on 20 lbs. pressure, in comparison with 40 or more in the larger units that have been used up to this time. This lower pressure reduces power requirements and permits use of smaller pipe. The result is that, as far as small acreages are concerned, the cost of irrigation has been cut in half.

Lightweight galvanized steel tubing in 20-foot lengths is used for the main and sprinkler line. A 20-foot length of 2-inch tubing, complete with the couplings, riser, and sprinkler head will ordinarily weigh 25 to 30 pounds. The 3-inch will weigh 35 to 40 pounds per 20-foot length.

The tubing is fitted with quick-acting self-sealing couplings, and no tools or equipment of any kind are needed to put the line together. The joints are



Left: A typical quick coupling for slip joint pipe with a riser and one of the newest types of rotating sprinkler heads. This little sprinkler covers a circle 45 to 50 feet in diameter.

Right: Types of slip joint couplings with locking devices. These joints have rubber gaskets, slip together easily, and are water tight under pressure. The upper illustration shows a riser at the end of a pipe line. The lower view is of a spirally welded pipe connection.

fitted with self-sealing rubber gaskets which seal automatically under water pressure. One of the illustrations shows a typical quick coupling together with a riser and sprinkler head. The link across the top is used to hold the section together when the tubing is filled with water under pressure.

Although the junior system was designed with the needs of small operators in mind, it is somewhat adaptable. What is termed the No. 1 unit provides irrigation for very small acreages at minimum cost, while the No. 2 equipment has twice the capacity of No. 1.

No. 1 uses 2-inch tubing for the main line and sprinkler line. On the 90-foot sprinkler line of 2-inch tubing are mounted five sprinkler heads. Since each sprinkler distributes water in a 40-foot circle, this means the No. 1 unit waters a strip 40 feet wide and about 120 feet long—or roughly one-tenth acre—at one time. A 2-horsepower motor operates the pump.

On the other hand, the No. 2 unit has a 190-foot sprinkler line of 2-inch tubing on which are mounted 10 sprinklers reaching a strip 40 by 220 feet, or about one-fifth acre. The main line is larger, being of 3-inch tubing. Three horsepower instead of two is about right for this system.

Three and Six Acre Outfits

Now, just how big jobs can these units handle? A little arithmetic furnishes the answers. Each unit applies an inch of "rain" in two hours. Allow 15 minutes for moving the sprinkler line. This means that the smaller unit, covering one-tenth acre at a time, puts an inch of water on half an acre in five "runs" requiring an 11¼-hour day. In a 6-day week it covers three acres. Or, in an emergency, operated night and day for seven days a week, it is able to apply an inch of water to more than seven acres.

Since the No. 2 equipment has twice this capacity, it is able to take care of six acres a week when operated moderate hours, or 15 acres if used continuously.

Bear in mind that an inch of water a week is not a niggardly amount for it is more than the average natural rainfall in many areas. It should be enough to insure a good crop even during extreme droughts when Nature supplies no rain at all. Where deep rooted crops call for more than an inch of water at a time, applications need not be made so frequently.

Ordinarily it is best to use a centrifugal pump operating at about 1800 r.p.m., although the rotary type will do if the water is clean. A belt drive is suggested, this having the advantage that by changing pulleys the speed can be adjusted to effect 20 lbs. pressure in the sprinkler lines. The pump should be placed not more than 10 feet above the water supply, if possible, and certainly no more than 15 feet higher.

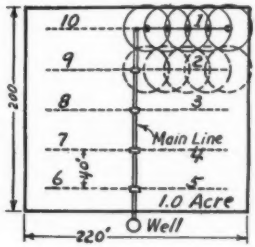
Although both sizes of the junior system are rather small as irrigation units go, they do require considerable amounts of water. No. 1 pumps 21¼

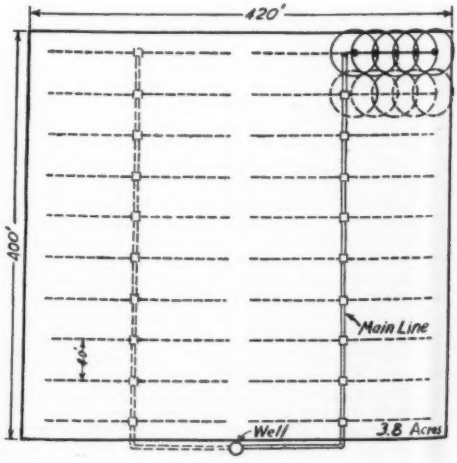
Junior No. 1 Portable Rotary Sprinkler System

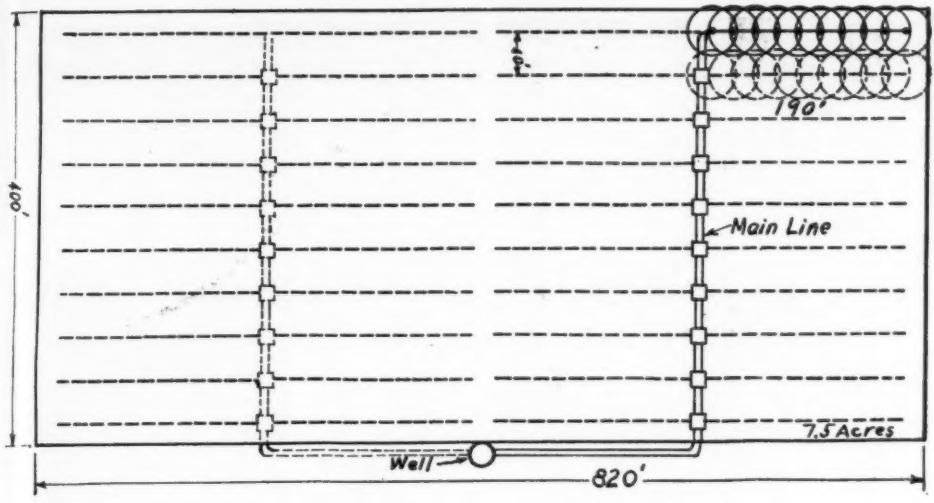
Suggested Pipe Layouts for 1 Acre and 4 Acres. The numbered lines show the successive placings of the portable branch pipe line. This movable pipe is made up of 1-10 foot and 4-20 foot joints with a sprinkler connection at each coupling. When the strip along No. 1 is watered, the branch pipe and sprinklers are carried to position No. 2, etc.

Each circle shows the area watered by one sprinkler with a water pressure of 20 pounds. The combined circles show the complete coverage.

Five sprinklers each delivering 4¼ gallons per minute makes 21¼ gallons per minute for the system which is equivalent to ½ inch of rain per hour.







Junior No. 2 Portable Rotary Sprinkler System

Typical Pipe Layout for 7½ Acres. The movable branch line is made up of 1-10 foot and 9-20 foot lengths of pipe with a sprinkler at each joint and at the end. The 10 sprinklers under 20 pounds pressure apply 42½ gallons of water per minute or the equivalent of ½ inch of rain per hour.

gallons per minute, while No. 2 uses 42½ gallons. This is beyond the capacity of the average farm water pump or water system. If an ordinary farm pump is to be used, it is desirable to pump and store the water in some sort of reservoir such as an artificial pond, and then pump from the pond to irrigate.

Ponds and Streams Supply Water

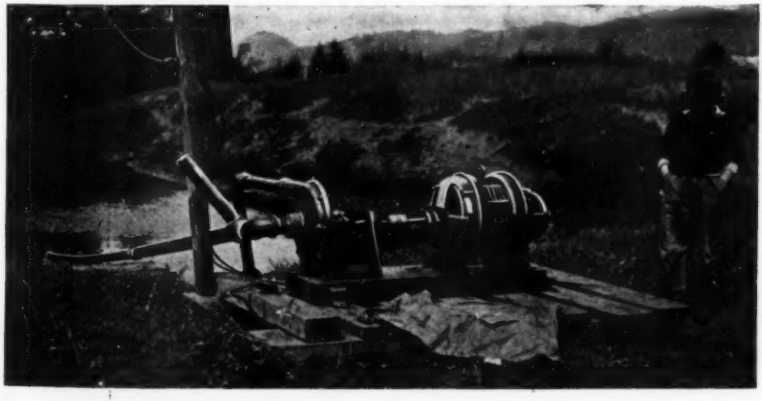
Artificial ponds also are possibilities for accumulating run-off rain water to be stored for irrigation purposes. Still another method feasible where the water table is high, is to dig a pit into which ground water may seep, or use sand points for driven wells. One prominent Wisconsin potato grower gets all the water he needs for extensive irrigation operations from a pit 125 feet long, 40 feet wide, and 25 feet deep. This fills with 15 feet of water.

The most economical and satisfactory source of water, of course, is a lake or stream, if one happen to be close at hand. If a stream runs by the field to be irrigated, it eliminates need for a main line. The length of the main plays no small part in determining both installation and operation costs.

It is frequently possible to secure secondhand pipe or boiler tubing at a very low price, and this is recommended for use in bringing the water up to the point corresponding to the well in the diagram. From here on, it would be desirable to use regular irrigation tubing with the quick couplings to facilitate moving the equipment, unless the main were stationary, in which case secondhand pipe or tubing could be used for all of the main with suitable outlets provided every 40 feet along one or both sides to provide connections for the sprinkler lines.

The three layout sketches suggest arrangements which provide for most economical use of the equip-

(*More on page* 24)



A centrifugal pump operated by a 5 HP. electric motor on the farm of Archie Pye, Tillamook, Oregon.

Above: One corner of the new dairy with the door to the cooling room open. The refrigeration machinery is at the back of the small raised platform in the center of the picture.

Left: This 20 gallon churn for handling surplus cream is operated by a ¼ HP. motor.

25¢ Per K.W.H.

—BUT IT'S COMING IN, NOT GOING OUT

By J. P. NICHOLSON

Mr. Nicholson Is County Agricultural Agent in Catoosa County, Georgia.

"I GET paid twenty-four and eight-tenths cents for every kilowatt hour of electric energy I use in my Farm Enterprise. This payment is in cash and above the energy cost. These figures are not guessed at and my farm record book and bank account for 1937 prove it," said J. S. Christian, dairy farmer, of Catoosa County, Georgia.

This unusual and interesting case of practical application of electricity on the farm, made possible the economical production of high quality dairy products suitable for the retail trade. When electricity came to the Christian farm, Mr. Christian started preparing to change from Grade-B wholesale milk production to Grade-A retail production. This change was completed in April of 1937. Since that date the daily watchword of the Christian farm has been High Quality, and this is made possible through the use of practical electrical appliances.

Let us look at the Christian farm enterprise "before" and "after."

Mr. Christian, his wife and three children live in a modest five-room home that is well-painted and kept in excellent condition. The farm consists of 128 acres, of which 56 acres are in cultivation, 69 acres in permanent pasture and 3 acres in woodland. Mr. Christian believes in soil conservation and improvement, as evidenced by the fact that in 1937, 41 of the 56 acres in cultivated land were devoted to soil conservation crops. He also applies annually about thirty tons of limestone and fifteen tons of phosphate, as well as all of the barnyard manure. In 1936 while Mr. Christian was producing wholesale milk, he had 19 milk cows, 40 hens, and a few hogs. His farm record showed a net cash income of $974.50. This was after de-

ducting all operating expenses on the farm, inculding seed, feed, fertilizer, hired-labor, taxes and increasing the dairy herd from 17 to 19 cows through purchases and trades.

On July 22, 1936, Mr. Christian received electric service. His initial expense for wiring and appliances was as follows:

Wiring home—$40; wiring barn—$18; light fixtures—$21; water pump and plumbing—$150; radio —$35, and electric iron—$4, making a total of $268.

Mr. Christian without electricity had been doing the best job he knew how, to make the greatest possible returns from the farm. With electricity, he knew he could install refrigeration and other equipment that would enable him to change his system of marketing milk. However, this, too, would cost money, but he decided after studying the problem that it was the correct thing to do.

The investment which Mr. Christian made in necessary electric farm equipment was as follows:

Walk-in cooler, aerator and circulating pump—$675; bottle-washer—$7; cream-separator—$175; running water to barn—$35, and churn—$35, or a total of $927.

Other investments for entering the bottled Grade-A milk business included the re-modeling of the milk room, bottles, caps, capping machine and cleaning supplies, also miscellaneous equipment and milk truck. This equipment cost $1,075 or a total investment, including the electric equipment, of $2,002. Adding to $268 for the household electrification, gives a total expenditure of $2,270.

Now comes the story of how rural electrification paid its way on the Christian farm: Starting in his new enterprise in April, 1937, his farm record book showed a net cash income for the year of $2,364.96. This figure was arrived at by subtracting from the gross sales all operating expenses including feed, seed, fertilizer, hired-labor, broken bottles, caps, five cents a mile for milk truck, $630 for ten additional cows and other dairy expenses.

During 1937 he purchased for the home an electric washing machine, electric fan and hot-plate, with a total value of $74. This increased his home electrification cost to $342, or a total investment since 1936, of $1,269 in farm and home electrical equipment. Adding the investment in dairy equipment gives a grand total of $2,435.

Did it pay? Mr. Christian was asked. "Look at my farm record book and I believe that you will have the answer." he stated. The increase in net cash income in 1937 over 1936 was $1,390.46 and this increase was made in only nine months of 1937. This increase was due largely to higher prices received for milk made possible through refrigeration and attendant equipment. "And this is only part of the story," Mr. Christian said, "I have invested part of my income back into the farm and this reflects in my inventory values. My farm will actually bring more money on the market today than it would before electricity came to us. This reflects in part that human and intangible benefit more commonly known as increased standard of living. My inventory increase amounted to $4,500 after taking into consideration nominal depreciation on all buildings and equipment. This inventory increase is not in actual cash but can readily be converted into such. In other words, my actual benefit from electricity during the first year amounted to about $5,890. However, just considering the "cool cash" increase of $1,390.46 which represents a return of 69 per cent on my investment of $2,002 in income producing equipment, or 60 per cent including the cost of home electrification. I ask you, where else can one receive such an interest on investment?"

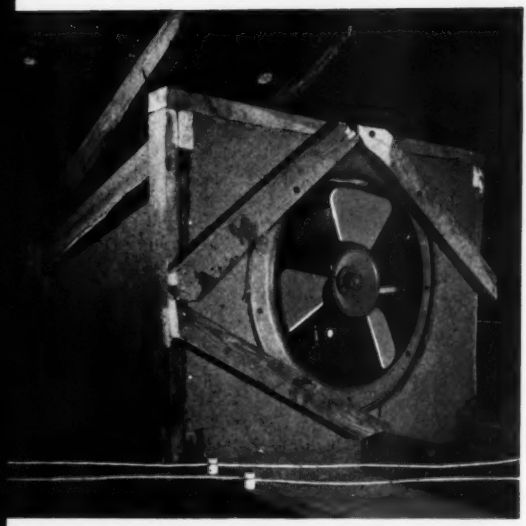
Mr. Christian in his new milk storage room. The tank he is looking at holds brine which cools the room and is also used for cooling milk over the surface cooler.

Unquestionably, the standard of living has increased on the Christian farm through proper lighting, the radio, pressure water in the kitchen and bathroom, washing machine, electric iron, fan and hot-plate; yet it would be hard to justify them out of the former cash income on this farm if they were taken alone. Through complete electrification, both in the home and on the farm, the entire program is both socially and economically sound.

Are the Christians through with rural electrification? No, in 1938, they plan to install an electric range, kitchen modernization, yard lights, and are now installing a milking machine. This seemingly is a good balance which is being kept between the electrical conveniences and income producing equipment.

Interesting, too, is the fact that when the Christians first had electricity only in the home, the monthly consumption of current averaged 76 kilowatt hours. After installing the farm equipment, it averages 682 kilowatt hours per month. This is about seven times the national average for rural electrification consumption on farms where irrigation is not a factor.

When asked what he thinks about rural electrification, Mr. Christian says, "just look around; see the new milk house fully equipped, the new tenant house and the improvements in my home. They are a result of rural electrification, and they are paid for. I now farm for money and pleasure, instead of necessity. Yes, and I almost forgot to tell you about the milking machine I am installing now. I have a good hired hand on my farm to help me, and I want to keep him and let him enjoy some of the advantages of electricity. This milking machine which we are installing will make his work easier, and give him a little more time to call his own."



ATTIC FAN
Cools A Farm Home

John Cross Chooses an Attic Fan in Place of a Sleeping Porch

By G. E. HENDERSON

"JOHN left to see about getting material to build a sleeping porch," explained Mrs. Cross to County Agent Vickers of Anderson County, Tennessee.

"You have difficulty cooling your house at night?" queried Mr. Vickers.

"Indeed we do. We have an eight-room house, which is too much room for just two of us, but we haven't a single bedroom that is cool enough to sleep in comfortably during the summer. I told John last summer that before another year I was going to save enough money to build a sleeping porch. We figure it will cost about $75 by furnishing most of the material ourselves."

F. G. Vickers, being a typical county agent, pondered over the conversation as he drove down the road. He decided to do something about it, and got in touch with M. M. Johns, State Rural Electrification Specialist, to find out about attic fans. Although he had heard of them he was not certain they were practical for farm homes. Mr. Johns promised full cooperation, and suggested that it might be well to make a demonstration of the installation if it proved practical.

One of the local dealers furnished the fan complete with motor for a sixty-day trial. Mr. Johns and Mr. Vickers used a very small portion of the sleeping porch material, plus some wall board, and made a box for mounting the fan in the attic.

Mr. and Mrs. Cross were quite cooperative, but their questions indicated some doubt as to how successful the installation would be.

"What will it cost to operate?" asked Mr. Cross.

"I don't believe it will exceed 35 kwhrs., or about $1.05 per month," explained Mr. Johns. "However, we'll install a check meter and find out exactly."

"Why wouldn't two or three little fans set in the windows do just as well?" asked Mrs. Cross.

Mr. Vickers took up the explanation. "You see, the principle is this, Mrs. Cross. A small fan in the room more or less recirculates the same air without much heat being removed. The attic fan works differently. About sundown the fan is

(*More on page 22*)

Upper: The fan is mounted in a box set over the entrance from the hallway to the attic. When the fan is in operation air is drawn from the hall into the attic and forced out the gable ends of the house.

Center: In late afternoon Mrs. Cross lifts the bedroom windows and starts the fan.

Lower: Pleasant sleeping is assured in a cool, well ventilated room.

A genial youngster—
Abe Jansen

PIONEERS

Abe Jansen Starts Cooling Apples in 1914. Still at It and Using Original 7½ Horsepower Motor

ABE JANSEN lives on a hill in a big white house near New Paltz, N. Y., about 80 miles north of New York City. As you drive up to the house, you pass through the oldest orchard of MacIntosh apples in the United States—41 years old this spring. That orchard of 100 trees was planted by Mr. Jansen "way back when" he did not know much about MacIntosh apples. One year, during the high price period, it averaged 10 barrels of apples per tree at $10 per barrel—but that's another story. What we started to tell about was that other white building we passed at the edge of the orchard, the first apple cold storage plant built on a farm in the United States to the best of our knowledge.

Mr. Jansen's first experience in apple cold storage was with ice. He had a 40 ton ice house; cut his own ice, and cooled the apples in a small storage house by filling bunkers with ice. He could not get the temperature down to 40 degrees, so in 1914 he built a new and larger storage plant. We take our hat off to him both as an apple grower and as an engineer, for that cold storage plant is still giving efficient service with its original equipment, and the design would stand up with present day engineering.

The storage rooms had a capacity of 4,000 barrels. It was originally intended to cool the house with ice and brine. Large tanks were to have been placed in the loft and filled with brine and ice. The cooling was to be done by pumping calcium chloride through coils of pipe placed in the brine tank and in openings in the loft floor so that there would be a down circulation of air over the coils into the storage room on one side and an upward air movement through ducts into the loft on the opposite side.

When the building was about completed, Mr. Jansen heard of an electric ice plant which was being installed in a nearby town. He went to see it. He decided he could do a better job of cooling apples with the ammonia compressor system and an electric motor than he could with ice and brine, and the shift in plans was made.

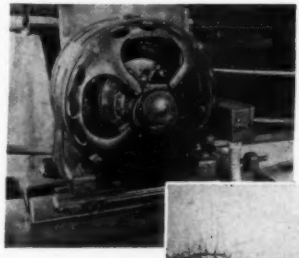
The refrigeration equipment consisted of a large, slow speed, two cylinder ammonia compressor driven by a 7½ horsepower, single-phase, 220 volt motor through a jack-shaft. This same outfit is still cooling apples each year from about August 20th to the middle of March or later. Repairs on the compressor in 24 years time are estimated by Mr. Jansen at $300, and consisted of new valves and bearings. The total repair bill for the motor was the big sum of $1.50. This was spent recently for inspection and cleaning up the commutator and brushes. The motor still has its original brushes.

The walls of the storage house consist of 2x4 studding with building paper and siding on the outside. Inside the studs is first a layer of paper followed by one inch sheathing, then one inch furring strips to make an air space, then paper, sheathing, furring strips, paper and sheathing, making one 4 inch air space and two 1 inch air spaces. To break up any vertical movement of air in the air spaces, cross strips were placed every few feet to block the passages. The loft was well insulated, and since it was not needed for brine tanks, it is also being used for storage.

Typical of operation cost for the plant was last year's power bill for eight months of approximately $250.00. Twelve thousand bushels of apples were cooled and stored.

The Jansen farm and home is well supplied with electrical equipment. The

(*More on page 20*)



Above: This is the PIONEER motor. It has cooled apples for eight months per year for 24 years with a repair expense of only $1.50.

•

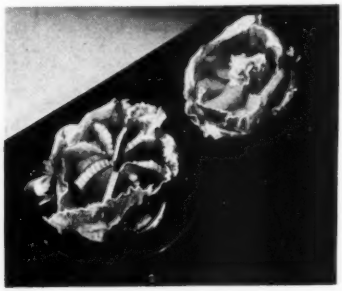
Right: The cold storage plant that has helped make profits on Jansen apples since 1914.

Electrical HOUSEKEEPING

Conducted by GAIL MEREDITH

Garden Salads

IF you are a combination cook and gardener, as most of us are, you doubtless planned your salads way along last winter when the seed catalogues came out. Maybe you planted them your-



selves and have watched them grow all summer long.

There is nothing like raising them ourselves to get perfect salads. Variety, freshness, color, they are all waiting in the rows of vegetables across the garden. This time of year we seize the opportunity of using them raw, not only because they are appetizing and attractive, but because that way we can get all their mineral salts and vitamins. When winter comes they still are salad timber when they've been canned or dried.

As you walk across your garden some of these mornings, you will find, I hope, plenty of lettuce, a row of endive, maybe chicory for another green. There should be cabbages and carrots, tomatoes, cucumbers, onions, and perhaps celery for your future salads.

Not everybody makes good salads, because not everybody takes the pains to learn the good from the bad. If you talk with food experts, or that neighbor of yours who 'has a way with salads,' you will find that a salad depends for its success on its color and form, on its texture and temperature quite as much as on its taste.

To begin with, before it even gets a tasting a salad must tempt the eye.

The easiest way to do that is with color and color contrasts. It is not mere chance that makes the pale green of cucumber slices, the red of tomato, and the dark green of watercress such a popular fall salad. The yellow of carrots, the white of celery, or the red and white of nippy radishes on crinkled lettuce leaves is another combination that catches the eye.

Garnishes of sliced radishes, of celery leaves, of pepper grass, green pepper, or a splash of paprika may make an undistinguished salad memorable.

It must be neatly piled on the plate. The leaves that hold it should not straggle over the edge to act as water courses for rivulets of salad dressing.

But even the best looking salad in the world will not win approval unless it is crisp and cold.

To ensure this you have to begin a long way back. The first step in making a salad is washing the greens, then soaking them in cold water for half an hour or so, and drying them on a towel or shaking them in one of those new wire baskets that hold a head of lettuce and let the water drain off.

Or if you brought in the vegetables in the morning, after washing them, you could wrap them in a damp cloth, put them in one of the oiled silk zipper bags, or lay them on a folded towel in a covered enamel dish and put them in the refrigerator.

Long before you are ready to mix the salad, the bowl and the mixing spoons, and the serving plates should be chilled.

Then of course, it must taste good.

This will depend not only on having it cold and crisp, not only on the freshness of your vegetables, but also on the way you've put them together and on the dressing you use.

It is a good idea to cut up your vegetables in chunks or slices that will not be mush when you toss them together. Not too big pieces so the dressing cannot penetrate them, nor so small that they lose their identity.

If you will cut your tomatoes in quarters or sixths instead of slices, the juice won't run out

The lettuce is crisp and fresh.

so much, thinning the dressing and puddling the plate.

Good salad makers say the marinade is the secret of success for many salads.

The word is related, so the dictionary says, to a French word that means to preserve food for use at sea. However, they used to pickle their meat or fish, the modern marinade is not a brine.

3 tbsp. of oil	1 tsp. salt
6 tbsp. lemon juice or vinegar	½ tsp. pepper
	½ tsp. onion juice

You use it by letting each ingredient of your salad, each ingredient separately, mind you, stand in this marinade for at least half an hour before you mix them together.

The last minute before the salad is served, you pop them all into a bowl and add just enough salad dressing to hold them together, and to give them tang and flavor, remembering always that you want your family to taste the tomatoes, the cucumbers, the carrots or the beans, not the dressing.

Most any meal is better for a good salad. Salads offer an easy and attractive way to coax your family to eat the fresh or raw foods you want them to have. There is color and flavor to a meal with salads that grow in your garden.

Cold salad dressing is always ready for use.

• • •

If You CAN

JULY brings the days when most good gardeners begin to put part of the garden into cans. And canning is a job, if there ever was one, that well repays a little extra emphasis on getting ready.

It is not a thing you can take hold of and carry out successfully just by instinct. It is a process

RUNNING water supplied by a reliable MYERS system lightens countless tasks, increases comfort and sanitation, gives protection to health and property. And in addition, you may be certain that a MYERS protects your purse as well. The famous MYERS quality assures remarkable durability and lowest possible operating cost. Deep and shallow well models to meet all needs; for operation by electricity, gasoline engine, windmill or hand power.

Fig. 3012 *"Pump Builders Since 1870"*

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Until the power line reaches you, enjoy running water with a MYERS Gasoline Powered System, which can later be converted to completely automatic electric operation by simply mounting an electric motor in place of the engine. Write us or ask your dealer.

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Send free information on items marked and name of your nearest dealer.

Water Systems (electric) ☐	Sump Pumps ☐
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Hand Pumps ☐	Power Sprayers ☐
Pump Jacks ☐	Hay Unloading Tools ☐
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Name .....

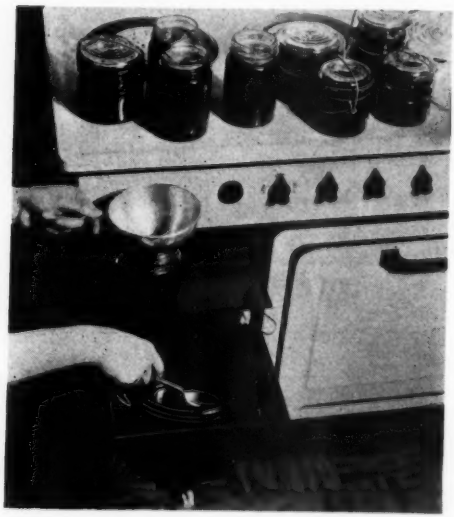
Address .....

Take Off Your Hat to The MYERS

Above: You can profess fruits and tomatoes in the oven of your electric range.

Center: The safe way for vegetables and meat.

Below: Making jam in the insulated well-cooker.



that demands exact knowledge, careful execution and patient obedience to rule.

That implies right at the start that you know what the rules are. And there is no reason why you shouldn't. You can get them in bulletins or circulars from your own state university and from the United States Department of Agriculture. These bulletins have in them, boiled down and put into something that approaches kitchen English, the results of constant research and experiment by trained food specialists all over the country.

"Home Canning of Fruits, Vegetables and Meats," Farmer's Bulletin No. 1762 costs just five cents from the Superintendent of Documents, Washington, D. C. The bulletins from your own university are doubtless free to you as a citizen of the state.

Before the first day's canning begins, the jars need your critical attention. Sort out and discard the cracked ones. Chipped edges are out, too, for they may prevent a perfect seal. Examine the lining of the metal caps. If you find any that are cracked or loose, discard them. See that the metal edges are smooth so they will fit down tight on the rubber rings.

If you use glass top jars, test the wire clamp to see whether it holds the lid down tight. You can make it fit tighter by taking the bail off, bending it in slightly at the top and sides, then putting it back on.

If you use the jars with rubber composition on disc covers, get your supply early. If you use rubber rings, estimate how many you are going to need. I know from experience how maddening it is to have three more jars than rings around nine o'clock some busy Saturday night.

Buy the Best Rings Obtainable

It is false economy to buy any but the best rings, and the worst of bad judgment to use rings over again. After all, the contents of just one jar is worth more than a dozen rings. And since the perfect sealing of your jars depends on the rings, they must be good.

Do you know a good rubber ring when you see one? The tests are simple. Double the ring together and press the fold down. The rubber should not crack. Stretch the ring gently. If it is a good one, it will stretch to twice its length and spring back to its original shape. Do not buy a brand of rubbers that will not pass both these tests.

With the jars taken care of, the pressure cooker next demands your attention. Go over it carefully to see whether it needs any repairs. Be sure that the pressure gage and safety valve are in good condition. Look out for corrosion or rust on either. Clean and oil any parts that need it.

Before you begin your canning, you ought to make sure that the gage is in good order and registers correctly. If you have a master gage you can find this out for yourself by putting it onto the cooker in place of the safety valve and checking one against the other as the pressure rises. If you haven't this gage, it may pay you to have the test made for you by the manufacturer of your cooker. He can check and repair the gage if necessary.

There are a good many small tools that help you through the busy days of canning. Start out with your paring knives razor sharp. Have accurate measuring spoons and cups. Pull out your big wooden spoon. Get a large mouthed funnel to fill the jars, and a colander and a wire basket for

washing berries and vegetables. If you want to spare your fingers and your temper, there is a jar lifter that makes it easier to take up the jars, a device for holding them tight while you screw the lid down, and wrenches for tightening those same lids.

Getting ready to can, means too, deciding on the method of processing for each product you have to can. If you have studied your job, you know that the method must fit the product for the best results. If you'll just run over that bulletin from the U. S. D. A. again, you will find that Dr. Louise Stanley says:

"For purposes of canning, foods are considered in two groups according to the quantity of free acid they contain. The acid foods are fruits, tomatoes, pickled beets, ripe pimentos, and rhubarb. The non-acid foods include all other vegetables, such as asparagus, peas, beans, and corn, and also meats and poultry."

Now the acid foods can be safely processed at

"Why I Would Like an Electric Refrigerator"

(Prize Winning Letter for April)

We insure our lives and buildings, so why not insure our health against possible food contamination or spoilage? Therefore the first reason "Why I Would Like an Electric Refrigerator" is HEALTH INSURANCE.

The second reason is that I could save safely left-overs from time to time which could be made into nourishing, tasty main dishes or salads. I never have been able to do this with my ice refrigerator; as it is, the dogs and cats get the scraps. So I should like an Electric Refrigerator for ECONOMY.

A neat, reliable and clean (no dirt to clean up after my husband brings in the ice) mechanical "Servant in the House" would save me many steps, make me delicious frozen desserts and cooling drinks whenever I desired, so CONVENIENCE would be my third reason.

The fourth reason "Why I Would Like an Electric Refrigerator" is that I would have assurance of all-around-the-year refrigeration) . . .

That the first and final price
For this pure and clean, white ice
Is all I have to pay.
The ice-man can't take every dime,
And I'd have ice at any time
In mechanical tray.

An Electric Refrigerator adds to home attractiveness, which is always very important, too. I could give reams of reasons "Why I Would Like an Electric Refrigerator," because I've dreamt of having one ever since the Consumer's Power wired our home "For Better Living Thru Electricity!"

MRS. RALPH S. RANDALL,
Route 6, Coldwater, Mich.

EDITOR'S NOTE—*Women from 24 states participated in the April contest.*

PERFECTION AUTOMATIC ★ MILKER

7 LONG-HOSE ADVANTAGES

The Perfection Automatic Milker is a long-hose machine, and this fact works to your advantage in 7 distinct ways:

1. Only a long-hose machine permits using a sterilizer rack and sterilizing solution, which means less work, less time, and CLEANER MILK.
2. No need of disassembling the teat cups before they are put on the rack. Cleaning is simplified.
3. Milker can be put far enough away to prevent cow's kicking the machine.
4. However low the cow's udder, she can always be milked with a long-hose machine.
5. No straps are necessary to keep machine on cow—no straps to break.
6. Either single or double unit can be used.
7. Cow can step in or out of gutter with no danger of milker becoming unhooked or trampled upon.

★ SUCTION CONTROL EXCLUSIVE WITH PERFECTION

Cows milk faster and more freely with a Perfection Automatic Milker because suction automatically increases or decreases according to the need of the cow. This feature is EXCLUSIVE with Perfection.

Be sure to see the nearest dealer today for a demonstration of the Perfection Automatic Milker or mail the coupon for free booklet. Also see the Perfection "Transport" Milker (Portable type).

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Gentlemen: I am interested in a Perfection Automatic Milker ☐ Perfection "Transport" Milker ☐ Please send me free attractive color booklet. I milk ..... cows.

My name is.....

Address .....

the temperature of boiling water. You can get that temperature, around 212 degrees in a water bath, in a steamer without pressure, or in an oven whose temperature you can regulate accurately.

All of the other foods should be processed in a steam pressure canner at a temperature of 240 to 250 degrees, a temperature you can get with 10 to 15 pounds pressure.

In the end, nothing except the cookbook and the cook, is more important to comfortable, successful canning than the fire. You need a steady, controlled heat under the pressure cooker so the pressure will not flare up to 15 pounds and drop back again to the 10 pounds you want. You need constant heat under the water bath to keep the water going at a brisk jumping boil throughout the processing. And if you can in the oven, you need a thermostat that will keep the temperature constant throughout the canning period.

Knowledge and skill go hand in hand for successful canning. Getting ready is part of the knowing, it seems to me.

July Contest

This is the month to get out your trusty scrap books and hunt up the papers you use to scribble recipes on. This is the month to make my mouth water with your most delicious recipe for your favorite frozen dessert.

If yours is the one we choose, we'll pay you five dollars for the printing of it.

If it turns out that there are so many good ones we have to use several, why, we'll pay the rest of you a dollar for yours.

Just send them in to me, Gail Meredith, at 1026 Seminole Highway, Madison, Wisconsin, by July 20.

• • •

Taking Care of the Washer

TAKING good care of your washer will lengthen its usefulness. Wash the right amount of clothes in the machine, the amount the manufacturer says it is designed to wash. Overloading is hard on both your clothes and your washer. For good washing use the right amount of water, too. The water line, marked on most machines, is your guide.

Keeping the washer clean is an important step in its care. Drain the tub just as soon as you've finished washing. Rinse it thoroughly with good hot water, letting the machine run a few minutes to get off all the scum on the sides of the tub. Then take out the agitator and wash it off, wiping it and the tub dry. This prevents much discoloration.

Be sure that you clean all the lint from the drain or strainer, and leave the drain faucet open. Prop the lid up an inch or so to let the air circulate under it freely.

Pull out the plug when you leave the washer and coil the cord up off the floor.

Keep the booklet that came with your washer handy so you can follow its directions for oiling the mechanism and the motor when they need it.

Since you want to keep all the mechanical parts free from dust if you expect good work from your washer, you'd better store it in a clean dry place. If there is bound to be dust, cover the washer up.

• • •

Iced Tea

General Rules for making tea

1. Always scald the tea pot before making tea.
2. Use freshly drawn water which is boiling vigorously.
3. Measure the water before you put it on to boil.
4. Measure the tea before putting it into the pot. Allow 1 teaspoon tea to every ¾ cup of water.
5. Pour boiling water directly over tea leaves. Allow to steep five minutes.
6. Freshly made tea is best, but if leaves are removed immediately after the five minutes of steeping, the tea will not become bitter.

For iced tea

1. Make strong tea, 1 teaspoon to a half cup of water, and pour it hot over shaved ice or an ice cube in a tall glass. Stir well and serve with lemon.
2. Make tea in usual way. Remove leaves and chill thoroughly. Serve with lemon.

Pioneers

(*Here from page* 15)

normal monthly electric bill when not running the storage plant is about $12.

Mr. Jansen was in his rock garden when we drove up. He did not go to Florida last winter but has been working in his yard, heading toward another state garden prize. He's a genial "youngster." Before you know him five minutes, he'll have you laughing over a good joke. He likes his iris, water lines and gold fish; and Murray Wigsten, rural service man for the Central Hudson Gas and Electric Company that serves the Jansen farm, whispered that Mr. Jansen was fixed so he could just continue to play in his garden all he wanted to, and not worry. He made it all on the farm.

Piecemeal? No—In for Life

(*Here from page* 8)

fields. Next to the sink stands a washing machine with a pump and rubber hose. The appliance receptacle 40 inches up from the floor is next to this. No more black iron kettle and wash board days for "Miss Minnie!"

The electric water pump just outside the back porch is conveniently located for adjusting and is adequate to pump all the water required for the house, chicken houses and barns.

All the equipment was in place before the meters were set so that the first month was a rigid test on the cost of operation. At the end of the month when dubious but curious friends stopped by, Mr. Powers said, "Friends, I'm just too full for utterance. Electricity is the cheapest thing I have ever bought. Why my ice bill alone for the month of June last year cost me more than my first month's electric bill. Electricity cooked our food, gave us perfect refrigeration (we didn't have to throw out one scrap of food or a drop of milk), washed and ironed our clothes; beat our cakes and made the butter; pumped all the water for the stock, chickens and us; kept us fanned; gave us as much entertainment and lights as they have on Broadway. All this, mind you, cost only $9.13. Can you blame me for saying electricity is the cheapest thing I ever bought. I'm only sorry the better part of our lives have been spent without it."

ON THE AIR

Conducted by JEROME J. HENRY

Those Famous Chimes

SOME people ride to fame on a song, but Ken Carpenter has done it on three notes: Sol, mi, do. Those are the notes of the NBC chimes which Mr. Carpenter has made nationally famous on the Music Hall program. In recognition of his "part-chime" work the announcer recently was presented a set of chimes by a vice-president of the broadcasting network.

With the instrument of his mastery went the title of "Public Chime Ringer Number 1." Chimes were also presented Bing Crosby and Bob Burns as runnersup for the title.

Radio's chime ringers worked obscurely until Crosby and Burns called attention to the fact that Carpenter was a master of the chimes. The chimes came in for a little kidding at the station break in the middle of the hour. Fantastic little dramas were built around the three notes for the amusement of listeners. In each of these Ken Carpenter played a leading role.

Portland Hoffa, wife and partner of Fred Allen, goes for a swim. That gives us all an idea these warm summer days.

Carpenter was born in Illinois in 1900. He went to school in Galesburg and there met a girl who became Mrs. Carpenter. They have an 8-year old son. Ken went on the air as an announcer at KFI in Los Angeles in 1930 and has covered many sports and special events. Accidents and narrow escapes are his specialty. He has had the honor of being kicked by a winning race horse. He was crippled for several days when a football player stepped on his foot. He was pushed through a plate glass window while covering a parade. Broadcasting a baseball game, he was hit on the head by a bat.

He still has a great sense of humor.

• • •

Formula for Telling a Joke

LEW LEHR, dialectician extraordinary of the Ben Bernie program, says one of the primary rules for telling a joke well is to make the story

17 YEARS IN ELECTRIC PUMPS

ONE OF First ELECTRIC PUMPS

Uniflow offers a complete line of Electric Shallow and Deep Well Pumps and Systems backed by 17 years of electric pump experience. With water systems and pumps approved for F. H. A. financing, you'll want to make a little private study of the Uniflow Line. A new catalog just off the press tells you why Uniflows stand-up year after year without costly repair—run so quietly—run so economically. Write for catalog and for name of nearest dealer.

FOR EXAMPLE: Here's a popular Deep Well System model at $104.00—has a 42 gal. tank-complete accessory equipment and pump all assembled, tested, and ready to go. Shallow Well Pumps start at $48.00.

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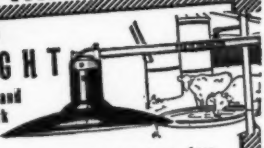
MILK COOLERS
WATER SOFTENERS

MODERN FARM LIGHTING

BENJAMIN YARD LIGHT

Light your farm yards and you'll get the rush work done on time!



Here's an inexpensive Yard light for your farm that will make you wonder how you ever got along without it! Manufactured by Benjamin, world leader in lighting equipment, this reflector is made of lifetime porcelain enameled steel. Easy to keep clean. Comes packaged ready for installation. Nothing else to buy. Package contains reflector, socket, conduit arm, wall fitting, bolts and 2 ft. wire leads.

SEE YOUR ELECTRICAL STORE OR WRITE THE BENJAMIN ELECTRIC MFG. CO. DES PLAINES, ILL.

BENJAMIN VARIETY-LITE

NEW LOW COST PORTABLE FLOODLIGHT FOR FARM FUN

on the farm! Think of how your family and friends will enjoy a yard floodlighted for night sports, night parties, etc. Provides protection against prowlers, too! Use it for night work. Take it from one location to another. A quality product made of lifetime porcelain enameled steel. Complete with unbreakable plug and extension cord . . . efficient—low priced.

BENJAMIN LIGHTING EQUIPMENT

Distributed Exclusively Through Electrical Wholesalers

brief, without omitting any necessary details.

The famous after dinner speaker and story teller has a dozen rules he observes. "Give your listeners credit for having normal intelligence," he says, "and don't tire them with 'build up' explanations that are too obvious. Another pitfall to avoid is prolonging a story because you like being the center of attention. If the gag needs more than an ordinary length of ground work, insert humorous reactions for relief as they enhance the final line."

Story tellers should never apologize for their jokes, Lehr warns, nor make excuses for lack of talent as a story teller before unfolding the story. Take it for granted that the audience has never heard the joke before. Some of the best stories today are at least 25 years old.

"Throw yourself wholeheartedly into the tale," advises Lehr, "create anticipation, and by all means believe in the comedy of the situation yourself. A good salesman believes in his line. Your line is the final gag line."

The life of the party, according to Lehr, is not the person whose jokes die in the middle. "There are a hundred different ways to make apple pie and most of them are good."

• • •

Light Task Shifting Responsibility

THE business management of the Stroud twins, heard every week over NBC stations has been transferred from Claude to Clarence. There hasn't been any trouble; it's just Clarence's turn. Claude

The Stroud Twins, Clarence and Claude or Claude and Clarence, you guess. Anyway you hear them both in a fine comedy sketch each Sunday evening.

has handled business affairs for six weeks now and the time has come for the usual switch.

Every six or eight weeks the boys alternate in managing the team. During the approaching term Clarence will go to the telephone or receive callers who want to discuss business matters. If the business is not particularly important Clarence will render a verdict, but if it is to be considered at length, he will call in Claude. During this period Clarence's opinions are to weigh slightly more than Claude's.

Just as the boys are twins in appearance they have twin business ability. Neither has been able to prove himself superior to the other in business matters. They share equal responsibility for getting their radio act in shape for the broadcasts.

"The New Oaken Bucket"

How dear to my heart are the scenes of my childhood,
When to the old spring all the horses we drove,
They had to be watered—'twas too far to carry—
So down the long lane, thru tag-alders we roved.

The cattle, the sheep, the pigs and the chickens,
Were hied down that lane when their turn came to drink,
'Twas always a nuisance, and hours of time wasted,
So dad got discouraged—and sat down to think.

"Why couldn't he pipe—from that spring to the barnyard
The water—so fresh—needed there every day?
A pump with a motor would sure do the business.
By Jove, he'd get at it the very next day."

Well, it worked, as was natural. Dad's proud as can be,
And he swears by the old spring that flows 'lectrically.
But that's just the beginning of improvements he'll make.
For the home and the barnyard "Electricity's Jake."

MRS. CORA SECOR,
Ishpeming, Mich.

Attic Fan Cools a Farm Home

(*Here from page* 14)

started, the doors and windows are opened in the rooms you wish to cool, and cool outside air is drawn in. Of course with the walls and furniture saturated with heat after a hot summer day, it is necessary to change the air rather rapidly in each room to enable you to notice the coolness. Consequently, we have followed recommendations and secured a fan that will completely change the air in each room every three to five minutes. Each air change means a large quantity of heat is removed, too. If the fan is operated all night the walls and furnishings are thoroughly cooled by morning. Then, if you close your house during the day, it will do much to keep it cool. In late afternoon you start the fan again."

"That's interesting, but I still can't see any reason for blowing the air into the attic," replied Mrs. Cross.

"You have been in an attic after a hot day, haven't you, Mrs. Cross?"

"Yes, and the air is stifling."

"That's it exactly. If not disturbed that blanket of attic heat will filter through the ceiling of your upstairs rooms all during the night. By putting the fan in the attic it does double duty; it pulls cool outside air into your rooms and uses that air to push the blanket of hot, attic air out the openings we have fixed in the gable ends of your house."

Two weeks of use after the weather got hot earned the fan a permanent home. It cost close to the estimated price of the sleeping porch and, instead of cooling one room, all eight rooms were cooled. The fan operated on from 20 to 30 kwhrs. per month during hot weather.

"Last summer there was hardly a night when we used the fan that we did not have to sleep under a blanket," explained Mrs. Cross. "And that isn't all; I appreciate not having an extra room to collect dirt and keep screened. Our neighbors have been asking about the fan and we tell them it's a good investment."

Questions and Answers

Light Weight Water Pipe for Irrigation

Question: *Kindly tell me where I can get light weight water pipe for irrigating.* T. S. M.

Answer: The following companies manufacture light weight irrigation piping:

California Corrugated Culvert Co., 5th and Parker Sts., West Berkeley, Cal.

Walker-Miller Irrigation Co., Antigo, Wisconsin.

Champion Corp., Hammond, Indiana.

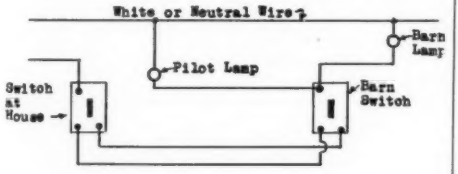
Modern Irrigation Company, Stillwater, Minnesota.

There are probably many other companies making this type of pipe but I do not know of any in the East.

Pilot Light on 3-Way Circuit

Question: *We have barn lights about 300 ft. from dwelling house and controlled by 3-way switches. Light is not visible from house switch. Can I connect pilot light with house switch to show when barn light is on? Where can I get a combination pilot light and 3-way switch?* W. J.

Answer: Herewith is a sketch of the wiring required for the hook-up you want. This pilot light will necessitate an extra wire from the barn



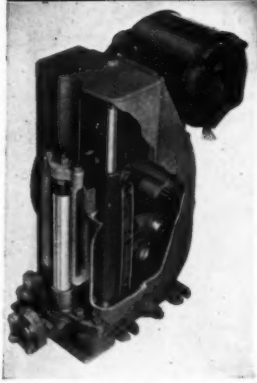
to the pilot as shown. Single-pole and 3-way switches are interchangeable so you can use the same box and cover that you would for a combination single-pole switch and pilot light. Dealers handling Bryant equipment can supply you. Why not have another yard light nearer the house on the same circuit? That would make light the whole way and would be no more difficult to wire than the pilot light.

Temperature of Brooder Houses

Question: *I noticed an article by Elwood Bicknell on "Electric Brooding Pleases this Farmer" in the January issue of this magazine. Is it essential to hold the temperature outside of the brooder at any specified point in order to get good results with the electric brooder? Should the curtain around the brooder go clear to the floor?* H. H. F.

Answer: It is not necessary to hold brooder houses at any special minimum temperature where electric brooders are being used. There are many

Visible Value in AERMOTOR WATER SYSTEMS



Extra value stands out everywhere on an **AERMOTOR.** Notice the patented U Bars which eliminate the usual front opening in pump. This feature keeps gear case closed . . . prevents anything from falling into it when well is "pulled", and keeps water out. Only **AERMOTOR** gives you this modern improvement. For permanent satisfaction select an **AERMOTOR.**

Write for "Facts" book.

AERMOTOR CO.
2500 ROOSEVELT ROAD - CHICAGO, ILL.

AUTOMATIC ELECTRIC DAIRY WATER HEATER

Hot Water 24 Hours a Day — Cheap, Clean and Efficient—No Odors, Smoke or Fumes — Fire Hazard Eliminated. Heaters Tested Under Actual Use on the Dairy Farm Are Absolute Proof That the Losee Is Extremely Economical.

Meets All Health Requirements

LOSEE PRODUCTS CO.
Hebron, Ill.

Blizzard Operates Easily, Economically, Efficiently with 5 H.P. Electric Motor

The Blizzard Ensilage Cutter and Hay Chopper operates with ease and amazing satisfaction with electric power. At Michigan State College 4 silos were filled with a total of 188 tons of ensilage at a total power cost of $5.34 using only a 5 h.p. motor.

Many farmers have found that the Blizzard and electric power make an ideal, profitable combination. Get free catalog at your dealer's or write us direct.

BLIZZARD MFG. COMPANY
Box E, Canton, Ohio

It's easy to understand that an automatic electric water supply system is the very heart of all farm life.

Health, happiness, comfort and convenience depend on a system that will stand up under the most severe service. By using the highest quality materials, skilled workmanship and the turbine principle of pumping, Westco has built a system guaranteed to give year after year of efficient service. Westco is truly the world's simplest electric pump, built in all sizes, and available at prices suitable to everyone's pocketbook.

MICRO-WESTCO, Inc.
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ELECTRICITY ON THE FARM
Readers' Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

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My name is .....
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..... 7-38

records of eminently satisfactory results at temperatures below freezing and even below zero. What Mr. Bicknell's figures pointed out was that during cold weather it is natural that more power will be used.

Power will be saved by having curtains close to the floor. It is good practice to keep the curtains close to the floor while the chicks are young, having them up just far enough so the chicks can find their way in and out. As they grow, the hover is raised.

Irrigation Outfits

(*Here from page* 11)

ment. Any arrangement may be used.

Under certain conditions of soil type and topography, it may be possible to run the water between rows. For this work, the same tubing may be used with light canvas hose lengths to direct the water between the rows. One manufacturer makes a special piece of tubing for this purpose. It has several outlets spaced about three feet apart so that streams of water may be delivered between several adjacent rows at one time.

For many farmers, irrigation is the final step needed to insure a bumper crop. It is not only a very practical form of crop insurance but a means of obtaining better quality and higher yields. Naturally it is most popular with farmers who grow crops which are expensive to produce, since they involve the highest loss when drought occurs and on the other hand are capable of yielding a high return if the yield and quality are good.

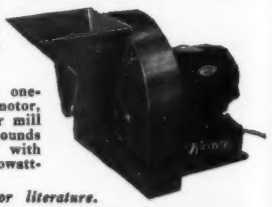
There is no reason to believe that the present high degree of interest in irrigation is a temporary phenomenon brought on by the unusually severe droughts prevailing in many areas during 1934, 1936, and to some extent in 1937. Farmers are beginning to realize that only rarely is rainfall so abundant and well distributed that crops are unable to benefit by irrigation.

WHEN laying a bathroom floor, always fasten two or more boards in place with screws instead of nails so that they may easily be removed to get at the concealed plumbing. If necessary to remove them, the boards are never split or injured as is usually the case when they must be pried up after being nailed.

An old carpenter gave me this hint while laying our bathroom floor.—*J. L. Baker, R. 2, Midlothian, Texas.*

Farmers Everywhere Endorse VIKING HAMMER MILL

Grind your own feed . . . as you want it . . . when you want it . . . at low cost.



Powered with a one-half horsepower motor, the Viking hammer mill grinds up to 700 pounds of feed per hour with less than one kilowatt-hour per hour.

Write for literature.

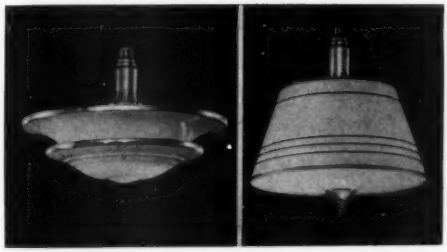
VIKING MANUFACTURING COMPANY
Jackson, Michigan, U. S. A.

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Lighting Fixtures

A line of lighting fixtures suitable for modern farm houses and designed to provide adequate intensity and proper diffusion of light with pre-



vention of glare is a new product of a manufacturer of lighting equipment. Units for living room, dining room, kitchen, bedrooms, hallways, and small rooms are available and may be screwed into any socket or outlet.

Stock Groomer and Massager

A new electrically operated stock grooming device patterned after the hand vacuum cleaner will soon be on the market to help the farmer

and dairyman keep his cattle in a healthy condition.

Inside of the suction nozzle is a smooth ribbed section, similar in appearance to the knuckles of a closed fist which massages the skin as the nozzle is passed over the surface. In this way loose hair, dirt, fleas and other matter is loosened and sucked into a cloth bag receptacle which may be easily detached and emptied.

It is reported that the cattle greatly enjoy this massage and that the treatment results in a healthful skin.

The device is undergoing intensive experimentation.

Low Cost Lighting Fixtures

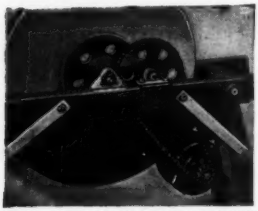
One of the most pleasing announcements we have been permitted to make in many months is that several established manufacturers have just issued circulars illustrating and giving prices of complete sets of well designed lighting fixtures for a six room house—and the price—$19.95 complete, including fixtures for living room, dining room, kitchen, 3 bedrooms, hall, front and back porch. All the fixtures has diffusing glass shades; they are well designed to give good illumination; they are easy to keep clean, are attractive, and right up to the minute. Heretofore few, if any, manufacturers made a complete line of fixtures for the whole house; prices were high. There was not a good selection in rural stores, and one

Don't Pump . . Turn the Tap!
OWN A
DELCO PUMP
Easy to Buy—Pays for Itself
● Why carry bucket after bucket of water for housework – or pump by hand gallon after gallon for the stock, when you can have running water, *under pressure*, by turning the tap? End unnecessary hard work–save time! Install a Delco Pump. You'll have up to hundreds of gallons an hour available every season of the year.
LOWER COST!
There's a model to fit your needs and your pocketbook. A Delco Pump *saves* for you and *earns* for you – enough to pay for itself and give you a profit besides!
Delco Pumps are available in deep or shallow well models–110 volt or 32 volt. See your local Delco Pump dealer now for full particulars.
DELCO PUMP MODEL C-12
Completely automatic operation–capacity 225 gallons per hour–12-gal. tank for storage purpose. This model for shallow well service.
Low Price
Low Operating Cost
Long Life
Easy Payment Terms
Ask your local Delco Pump dealer.
RUNNING WATER
UNITED MOTORS SERVICE INC.
General Motors Bldg. Detroit, Mich.
PRODUCT OF GENERAL MOTORS

was very likely to end up with poorly designed fixtures at plenty of cost—or just bare drop lights. This new line is encouraging.

Power-Driven Grindstone

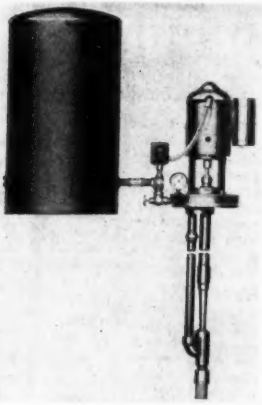
A Massachusetts concern has recently put out a ¼-h.p. motor-driven grindstone which should appeal to farmers having considerable grinding to do. Nova Scotia or Ohio quarry stones are furnished 22 in. in diameter by 2 in. face. The stone is mounted on ball bearings and has combination chain and gear drive. It is arranged for either wet stone or drip grinding.



SECTIONAL VIEW OF POWER UNIT WITHOUT GUARDS

New Vertical Centrifugal Pump for Deep or Shallow Wells

A new vertical, close-coupled motor-driven centrifugal pump for general service in deep or shallow wells has been announced. It is for either high or low pressure at 2 to 80 gallons per minute, with 1/6 hp. and up.



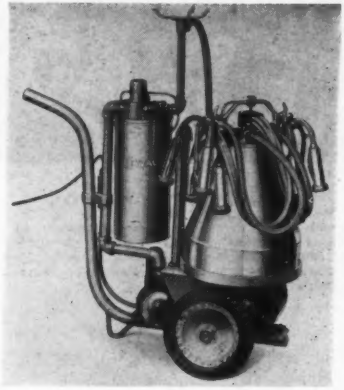
It is compact, simple in design, and requires no lubrication. There are no mechanical moving parts below ground.

Units for shallow well service consist of combined motor, pump and base, into the bottom of which is screwed a single suction pipe extending below the water level. This is satisfactory for water lifts up to 25 feet.

Pumps for deep wells are equipped with an ejector and venturi in one of two drop pipes extending from the pump down into the well. By allowing a predetermined amount of water from the pump discharge to bypass down one of the drop pipes in the well and back up through the ejector into the venturi, a vacuum is created above the ejector nozzle, drawing well water into the suction chamber. The high velocity of the water through the venturi, and the mixing of the two streams of water, lifts the well water to within reach of the pump suction. Positive water lift is insured.

Portable Milking Machines

Several manufacturers have placed new portable milkers on the market recently. They are similar to standard pipe line machines but are mounted on wheel cars. The milkers are used in the usual way but the pipes are eliminated by wheeling the



pumping unit along behind the cows and plugging it in at convenient points. One of these machines milks directly into the can.

New Bulletins

"WIRING THE FARMSTEAD," Extension Bulletin 63 (Revised), Kansas State College, Agricultural Extension Service, Manhattan, Kansas, May, 1938.

"ELECTRIC BROODING OF CHICKS" II, Heat Requirements, Bulletin 303, University of New Hampshire, Agricultural Experiment Station, Durham, New Hampshire, March, 1938.

"THE ELECTRIC FENCE SITUATION," Mimeographed Bulletin 453, New York State College of Agriculture, Agricultural Extension Service, May, 1938.

—I'm proud I am a Farmer—

CLASSIFIED ADVERTISING

LYON FLY ELECTROCUTORS ARE CHEAPER THAN SPRAY. Safe, Effective, Economical, Guaranteed. Free circulars. Also catalog of largest all-electric poultry supply lines. Proven money-saving brooders, parts for homemade equipment, burglar alarms, ventilators. Advisory service without obligation. Write today. LYON RURAL ELECTRIC CO., Dept. EF, San Diego, California.

Kill Flies and Insect pests the NEW MODERN WAY with DUROBAR ELECTRIC TRAPS inside; DUROBAR ELECTRIC SCREENS on doors outside; DUROBAR ELECTRIC PANELS on premises. Protects Home, Dairy and Farm. Low cost. Used everywhere. Astonishing results. Descriptive illustrated literature sent on request. Write—NATIONAL ELECTRIC SCREEN CO., Dept. EF-2, 29 North Peoria Street, Chicago, Ill.

Extra Money For You All Summer. Sell Electric Fly Trap. Prospects everywhere—dairies, farms, homes. Never fails. Quick canvass. People ask to see it work. Five minute demonstration sells. Get busy. Fine profits. Also complete line electrified door and window screens. Write us today. Cesco, 2300 Warren Boulevard, Chicago, Ill.

Amazing, New Dynamic Electric Arc Welder. Works off 110 volt circuit. Welds cylinder blocks, fenders, frames. Does industrial repairs. Easily operated. Sells on 5 minute demonstration to mechanics, repairmen, farms, shops and factories. Retails $19.75 complete. You make big profits. Write for FREE information. Dynamic Welder, 2226-EY Silverton Rd., Chicago, Ill.